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Who's Who in French Geology

(*Universities and Geological Services*)

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The purpose of this article is to list various French geologists and to give an idea of the fields in which they have worked in the past and those in which they are at present carrying on activity.

The arrangement is made, first of all, geographically by cities, and then by institutions in those cities. No attempt has been made to cover completely the life work of these men, but merely to give an idea of their most outstanding achievements in different fields of endeavor. This should prove, however, to be valuable to anyone interested in mineralogy or geology, and particularly to students contemplating work in French universities.

As there is no French publication similar to *American Men of Science*, this list may enable American geologists to locate French geologists working in given fields. The most recent *Qui êtes-vous* lists only a few geologists. Even Poggendorf lists very few French geologists so that this source of information is also not available.

Having lived five years in France and in French colonies, the author takes pleasure in contributing in this small way to the realization of an increased intellectual rapprochement between France and the United States.

UNIVERSITIES

PARIS

COLLEGE DE FRANCE—*L. Cayeux*, specialist of sedimentary petrography; important work on the oölitic iron ores; following studies at present on sedimentary phosphates.

MUSEUM D'HISTOIRE NATURELLE—*P. Lemoine* (director and professor of geology), studies on Madagascar; geology of the Paris Basin; earthquakes.

R. Abrard (assistant), Eocene of the Paris Basin.

M. Boule, paleontology of mammals; fossil man; studies of the Massif Central; vulcanism; Quaternary.

J. Cottrau, Echinoidea.

J. Piveteau, fossil reptiles and paleontology of vertebrates.

A. Lacroix (perpetual secretary of The Academy of Sciences), vulcanism; petrography; mineralogy of France and her colonies; study of Mt. Pelée.

J. Orcel (sub-director), reflecting power of opaque minerals.

FACULTE DES SCIENCES—*Charles Jacob* (member of The Institute), stratigraphy of the Middle Cretaceous; geology of Indo-China (chief of the geological service, 1919-1922); geology of the Pyrenees and of the Aquitanian Basin. (The laboratory of Professor Jacob has become in the last few

years the center of the French geological movement.)

M. Casteras, geology of the Pyrenees.

Lanquine, stratigraphy of the Jurassic of the Provence (southeastern Mediterranean France).

J. Joleaud, paleontology.

Luteaud, physical geography.

L. Bertrand, applied geology; structure of the Pyrenees. (His theories concerning the Pyrenees have been overthrown recently by the works of Charles Jacob and his students.)

J. Bourcart (maître de conférences), physical geography; geology of Albania, Morocco, and Canary Islands.

F. Wallerand, crystallography, polymorphism, and isomorphism.

A. Michel-Levy, petrography; geology of the Vosges Mountains and of the Massif Central.

L. Mauguin (maître de conférences), mineralogy; liquid crystals.

ECOLE NATIONALE SUPERIEURE DES MINES—*A. Demay*, general geology.

G. J. Painvin, paleontology.

P. Jodot (assistant), paleontology; fresh water mollusks.

F. Grandjean, mineralogy.

L. de Launay, applied geology; authority on ore deposits; famous textbook, *Traité de Métallogénie, Gites minéraux et métallifères*, 3 vols., 1913; *Gold of the Rand; Gold in the World; Bulgaria and Turkey; Economics after the World War; The Mineral Conquest.*

H. Douville. This famous paleontologist, even though he is retired and eighty-four years of age, continues to work regularly at the laboratory of paleontology of the School of Mines, which he made famous during so many years.

ECOLE NATIONALE DES PONTS-ET-CHAUSSEES (National Engineering School)—*F. Raguin*, studies on French Central Plateau and French Alps.

ANGERS

FACULTE CATHOLIQUE DE L'OUEST—*J. Peneau*, geology and paleontology.

BESANCON

E. Fournier, geology of the Jura Mountains; tectonic geology, hydrology, and speleology.

BORDEAUX

F. Daguin, general geology; stratigraphy and paleontology of the Upper Cretaceous; geology of the northwest of Morocco.

L. Glaugeaud (assistant), geology of Algeria; petrography.

O. Manville (chargé de conférences), mineralogy.

CAEN

M. Daugeard, submarine geology.

M. Mercies (assistant), Echinoderms.

A. Bigot, Middle Jurassic and Paleozoic of the west of France; now retired but continues his work.

Blanc, mineralogy.

CLERMONT-FERRAND

J. Jung, geology of the Vosges Mountains; petroleum geology.

G. Garde (chargé de cours), mineralogy.

DIJON

E. Chaput, Quaternary plains and the geology of Asia Minor.

R. Ciry (assistant), geology of Northern Spain.

GRENOBLE

M. Gignoux, Mediterranean Pliocene; Quaternary terraces; geology of the French Alps.

L. Moret, structure of the French Alps; paleontology of Spongiaria.

R. Blanchard, physical geography of the Alps; various sections of France and Syria. (Sometime professor at Harvard.)

LILLE

UNIVERSITE DE L'ETAT—*P. Pruvost*, Carboniferous; paleontology of coal.

Ch. Barrois, coal deposits of Northern France; paleontology and applied mineralogy.

A. Duparque (suppléant), microscopic studies of the coals.

M. Leriche, specialist on fossil fishes; the Tertiary of the Franco-Belgian Basin.

P. Bertrand, Carboniferous flora.

INSTITUT CATHOLIQUE DE LILLE—*Delepine*, Carboniferous marine paleontology and the Paleozoic in general.

G. Dubar (assistant), Lias and Brachiopoda.

G. Depape, Tertiary plants.

M. Carpentier, paleobotany.

LYONS

F. Roman, Ammonites of Lias; fauna of the Upper Cretaceous; Pectinidae of the Neogene (Upper Tertiary); Mammals.

L. Doncieux (chargé de cours), Nummulitic; Foraminifera of the Tertiary.

Dareste de la Chavanne (assistant), paleontology of the Lias.

W. Longchambon, mineralogy.

MARSEILLE

G. Corroy, Trias of Germany; Middle Jurassic; paleontology of the Callovien in the east of France.

Denizot (assistant).

MONTPELLIER

J. Blayac, geology of the Seybouse Basin.

Thoral (assistant), Paleozoic of the Black Mountains.

NANCY

Paul Fallot (director of the Institute of Applied Geology), geology of the basin of the West Mediterranean; Cephalopoda of the Lower Cretaceous; geology of the Balearic Islands; stratigraphy and tectonics of the Jura Mountains; geology of Southern Spain and of Morocco.

H. Joly, geology of Lorraine and Jurassic of the Paris Basin.

L. Thiébaut, ore deposits of Northern and Central Africa; alluvial deposits; clay.

L. Longchambon, refractory products, general mineralogy.

POITIERS

Patte, geology of Indo-China.

RENNES

Y. Milon, Paleozoic of Brittany; alluvial materials.

ST. ETIENNE

ECOLE SUPERIEURE DES MINES—*Neltner*, geology and applied geology; geology of Central Morocco.

STRASBOURG

UNIVERSITY OF STRASBOURG—*G. Dubois*, Quaternary terraces; geology of the Vosges.

J. de Lapparent, petrography of sedimentary rocks and of bauxite deposits.

INSTITUT DE PETROLE—*H. Derville*, sedimentary rocks.

TOULOUSE

UNIVERSITE DE L'ETAT—*L. Mengaud*, geology and mineralogy; geology of the Pyrenees and of the Cantabria region of Spain.

G. Astre (assistant), paleontology of Rudistae and Foraminifera.

Duffour, mineralogy.

INSTITUT CATHOLIQUE—*Bergougnoux*, paleontology of reptiles (Cheloniens).

ALGERS

J. Savornin, geology and mineralogy; geology of Algeria.

E. F. Gautier, physical geography of Africa; specialist on deserts.

M. Dalloni, agricultural and applied geology; applied geology of South Algeria and the southeastern slopes of the Pyrenees.

GEOLOGICAL SERVICES

FRANCE

GEOLOGICAL SERVICE OF FRANCE—62 Boulevard Saint Michel, Paris; director, *L. de Launay*, general inspector of mines; vice-director, *Grandjean;* assistant to the director, *F. Raguin*, tectonic geology and petrography of the French Alps.

GEOLOGICAL SERVICE OF ALSACE AND LORRAINE—2 rue Blessig, Strasbourg; director, *G. Dubois*, Quaternary of Northern France; assistant-director, *Briquet;* collaborator, *Henri Erhart*, pedology (Madagascar, Alsace-Lorraine).

COMMITTEE FOR THE STUDY OF MINES OF THE FRENCH COLONIES—13 due de Bourgogne, Paris; director, *F. Blondel*, formerly director of the mining and geological services of French Indo-China.

COLONIES

The geological services of the colonies, protectorates, and territories under mandate are all directed by the chief of the mine services of the colonies. The actual participation in the work is done by professional geologists.

ALGERIA

Director, *Betier*, engineer in charge of mines, chief of the Algerian mining service; assistant-director, *Savornin*, professor in the faculty of sciences; assistant-director, *Dalloni*, for southern territories; assistants: *MM. Gautier, Flandrin, Deleau;* collaborators: *MM. Anderson, Roubault, Royer, Geoffroy, Ehrmann, Glangeaud, Joleaud, Lucas, Menchikoff.*

TUNISIA

Director, *M. Solignac*, chief of the geological service; collaborators: *MM. Schoeller, Berkaloff*, mining geologists.

MOROCCO

Director, *M. Despujols*, engineer in charge of mines, chief of the mining service; assistant, *M. Bondon*, mining engineer; technical adviser of the protectorate for geology, *Paul Fallot* (director of the Institute of Applied Geology at Nancy); permanent geologists: *MM. Termier, Roch*, (the former is a specialist of the Paleozoic of Morocco and the latter is one of the best stratigraphers of Northern Africa, if not the best); geologists in charge of missions: *MM. Neltner, Lacoste, Bourcart, Russo, Marcais, Clariond, Choubert;* director of phosphates, *M. Beauge*, geology of Morocco.

FRENCH WEST AFRICA

Director, *M. Malavoy*, mining engineer; mineralogist, *M. Faucheux;* geologists: *MM. Reformatsky, Prokopenko, Dobrojansky, Sagatzky, Goloubinov, Bogarsky, Skavich, Baud, Serpokryloff, Postovoy, de Chetelat.*

TOGO

Geologist, *Kouriatchy.*

CAMEROUN

Geologists: *MM. Koretzky, Buisson.*

EQUATORIAL FRENCH AFRICA

Director, *M. Lombard*, chief of the service; geologists: *MM. Babet, Lebedeff, Emelianoff.*

FRENCH ESTABLISHMENTS OF THE LEVANT

Director, *M. Dubertret*, chief of the service, Beyrouth.

SOMALILAND

Geologist, *M. Dreyfus*, at Djibouti.

MADAGASCAR

Geologists: *MM. Besairie, Lenoble, Hourcq;* mineralogist, *Mlle Brière.*

INDO-CHINA

Geologists: *MM. Fromaget, Gubler, Hoffet, Saurin, Bonelli;* Commandant *Dussaut* (retired).

A Bibliography of French Magazines and Journals in the Fields of Geology and Mineralogy

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This list of French magazines has been prepared for the benefit of students of geology in this country. Its purpose is to show the diversity of sources of information concerning recent geologic advance in France, as well as some of the sources in that immense storehouse of French geological literature built up over the last several hundred years.

One of the most important publications is that of the Geological Society of France—the *Bulletins* and the *Mémoires*. The Geological Service issues *Mémoires pour servir à l'explication de la Carte Géologique détaillée de la France*, appearing since 1874, and *Bulletin des Services de la Carte Géologique de la France et des Topographies souterraines*, appearing since 1889.

In the field of mineralogy, the *Bulletin of the French Society of Mineralogy* is, of course, the leader. For paleontology, the *Annales de Paléontologie* is the principal publication. The various schools of geology have their own publications, such as *Travaux du Laboratoire de Géologie de la Faculté des Sciences de l'Université de Grenoble*. The geological services of the various colonies put out their own publications such as the *Bulletin et Mémoires du Service Géologique de l'Indochine*, which is excellent.

Local scientific societies frequently publish articles of geological interest; for example, the *Société des Sciences de Nancy*. Among the sources where articles frequently appear, the publications of the French Academy of Sciences would probably rank well towards the front. Such publications as *la Géographie* and *la Nature* would rank next. In addition, it is necessary to mention the publications of the various museums, such as the *Bulletin du Muséum d'Histoire Naturelle* and those of the Bureau of Mines, as well as those of the water and forest departments.

In order to facilitate the use of this list, the author has divided it into three groups: the first group being those magazines or publications which are of primary importance; the second group being those in which articles concerning the field of geology and mineralogy frequently appear; and the last group being a list of annuaries and bibliographies of interest in the fields of mineralogy and geology.

FRENCH GEOLOGICAL AND MINERALOGICAL MAGAZINES

Annales de Paléontologie. Since 1906.

Annales des Sciences Géologiques. 1869-1891. Paris. (Masson.)

Annales de la Société Géologique du Nord. Since 1870 in Lille.

Bulletin du Service de la Carte Géologique de l'Algérie. Since 1902. Alger.

Bulletin des Services de la Carte Géologique de la France et des Topographies souterraines. Since 1889.

Bulletin du Service Géologique de l'Indochine. Since 1913. Hanoï-Haïphong.

Bulletin de la Société Française de Minéralogie. Since 1878.

Bulletin de la Société Géologique de France. Since 1830.

Bulletin de la Société Géologique et Minéralogique de Bretagne. Since 1920. Rennes.

Bulletins des travaux du laboratoire de Géologie de la Faculté des Sciences de l'Université de Grenoble. Since 1890.

Mémoires du Service Géologique de l'Indochine. Since 1912.

Mémoires pour servir à l'explication de la Carte Géologique de la France. Since 1877.

Mémoires de la Société Géologique de France. Since 1833.

Mémoires de la Société Géologique du Nord Since 1876 in Lille.

Travaux du Laboratoire de Géologie de Lyon. Since 1921.

NO LONGER APPEARING

Agence (Then Conseil) *des Mines de la République,* Paris. 1795-1801. Became *Journal des Mines, au Recueil de Mémoires sur l'exploitation des mines et sur les sciences et les arts qui s'y rapportent.* Paris. 1802-1815. This became *Annales des Mines.* Since 1816.

Journal de Géologie. Paris. 1830-1831.

JOURNALS IN WHICH GEOLOGICAL AND MINERALOGICAL ARTICLES FREQUENTLY APPEAR

Annales Forestiéres et Métallurgiques. Paris. 1842-1865. Now *Revue des Eaux et Forêts et Annales forestières réunies.* Paris. Since 1866.

Annales de Géographie. Paris. (Armand Colin.) Since 1891.

Annales Hydrographiques. Paris. Since 1842.

Annales de l'Institut botanico-géologique colonial de Marseille. 1893-1894. Became *Annales de l'Institut-colonial* (then *du Musée colonial de Marseille*). Since 1895.

Annales de l'Institut Océanographique. Paris. Quarto Volumes. Since 1909.

Annales des Mines. Paris. (Dunod.) Since 1816.

Annales des Mines de Belgique. Bruxelles, Belgium. Since 1896.

Annales du Musée d'Histoire Naturelle de Marseille. Since 1882.

Annales du Muséum National d'Histoire Naturelle de Paris. 1802-1813. (Became *Mémoires du Muséum National d'Histoire Naturelle de Paris.*) 1815-1832.

Annales des Ponts et Chaussées. Paris. Since 1831.

Annales scientifiques de l'Ecole Normale Supérieure. Paris. (Gauthiers-Villar.) Since 1864.

Annuaire des Ponts et Chaussées. 1804-1805. Became *Annuaire du Corps des Ponts et Chaussées et des Mines.* 1806-1829. (Became *Annales des Ponts et Chaussées.* Since 1831.)

Annuaire de l'Université Aix-Marseille Since 1884.

Archives du Muséum National d'Histoire Naturelle. 1839-1864. (Became *Nouvelles Archives du Muséum National d'Histoire Naturelle.*)

Arts appliqués à l'Industrie. Liège, Belgium. (Paris—Le Soudier.) Since 1857.

Association Minière d' Alsace et de Lorraine. Since 1919.

Bulletin du Muséum d'Histoire Naturelle. Paris. Since 1895.

Bulletin de la Société de Géographie. Paris. 1882-1899. (Now, *la Géographie.* Since 1900.)

Bulletin de la Société de l'Industrie Minérale. Paris. 1855-1921. (Now *Revue de l'Industrie Minérale.*)

Bulletin de la Société des Savants (sciences mathématiques, physiques, et naturelles). Since 1898. (See *Revue des Travaux Scientifiques.*)

Bulletin des séances de la Société des Sciences de Nancy et de la Réunion biologique de Nancy. Since 1889.

Chronique Industrielle et Commerciale. Since 1923. Refer to *Journal des Pétroles.*

Chronique des Mines Coloniales, la. Paris. Since 1932.

Comptes-Rendus de l'Académie des Sciences. Paris. (Gauthiers-Villars.) Since 1835. (Weekly.)

Echo des Mines et de la Métallurgie. Paris. (Desrenaudes.) Since 1874. (Tri-Monthly.)

Géographie, la. Paris. Since 1900. (Formerly *Bulletin de la Société de Géographie.*)

Géographie, la (revue générale des sciences géographiques). Paris. 1888-1892.

Géologie et les Mines de la France d'Outre-Mer, la. Paris. Since 1932.

Histoire de l'Académie Royale des Sciences. 1666-1790. Became *Mémoires de l'Institut National des Sciences et Arts.* (Sciences mathématiques et physiques.)

Journal des Charbonnages. Paris. Since 1916.

Journal des Pétroles. Paris. 1901-1923. (Changed to *Chronique Industrielle et Commerciale.*)

Journal des Sçavants. Paris. 1665-1792. (Became *Journal des Savants.*)

Journal des Savants. (Institut de France.) Paris. Since 1793.

Mémoires de l'Académie des Sciences de l'In-

stitut de France. Paris. Since 1816. [Formerly *Mémoires de l'Institut National des sciences et des arts.* (Science mathématique et physique.) 1791-1806. This was formerly *Histoire de l'Académie Royale des Sciences.* 1666-1790.]

Mémoires du Muséum National d'Histoire Naturelle de Paris. 1815-1832. Became *Nouvelles Annales du Muséum National d'Histoire Naturelle.* 1832-1838. Then became *Archives du Muséum National d'Histoire Naturelle.*)

Mercure Technologique. Paris. Since 1819.

Mines, Carrieres, Grandes Entreprises. Paris. Since 1922. Monthly.

Nature, la. Paris. Since 1873.

Nouvelles Annales du Muséum National d'Histoire Naturelle. 1832-1838. (Became *Archives du Muséum National d'Histoire Naturelle.* 1839-1864. This became—see next below.

Nouvelles Archives du Muséum National d'Histoire Naturelle. Paris. (Masson.) Since 1865.

Revue Algérienne des Colonies. 1859-1860. (Became *Revue Maritime et Coloniale.*)

Revue annuelle de Géographie. Paris. Since 1924. (Before it was *Revue de géographie.*)

Revue Coloniale. 1843-1858. (Became *Revue Algérienne des colonies.*)

Revue des cours scientifiques de la France et de l'étranger. Paris. 1863-1870. (Became *la Revue scientifique de la France et de l'étranger.* Paris. 1871-1884.)

Revue des Eaux et Forêts. Paris. 1862-1865.

Revue des Eaux et Forêts et Annales forestières réunies. Paris. Since 1866.

Revue Genérale des Sciences Pures et Appliquées. Paris. Since 1890.

Revue de Géographie. Paris. 1877-1921. (Then became *Revue annuelle de Géographie.*)

Revue de Géographie Alpine. Grenoble. Since 1920.

Revue de Géographie Physique et de Géologie Dynamique. (Bulletin du Laboratorie de Géographie Physique de la Faculté des Sciences de l'Université de Paris.) Paris. Since 1928.

Revue Géographique Internationale. Paris. 1876-1903.

Revue de Législation des Mines et Statistique des Houillères en France et en Belgique. Lille and Paris. 1884-1914.

Revue de l'Industrie Minérale. Paris. Since 1921. Bi-weekly.

Publications of the "Comité d'Etudes Minières pour la France d'Outre-Mer." Paris. Since 1932.

Revue Industrielle. Paris. Since 1870.

Revue Maritime et Coloniale (historique, scientifique, économique, et sociale.) Paris. Since 1861. (Suite of *Revue Algérienne des Colonies.*)

Revue des Matériaux de Construction et des Travaux Publics. Paris. Since 1905.

Revue de Métallurgie. Paris. Since 1904.

Revue du Pacifique. Paris. Since 1922.

Revue Parisienne de Banque et de Mines. Paris. Since 1893.

Revue Pratique des Industries Métallurgiques. Paris. Since 1906.

Revue Rose. Paris. Since 1884.

Revue Scientifique de la France et de l'étranger. Paris. 1871-1874. Became *Revue Rose.* Since 1884.)

Revue de la Société des Savants. (Sciences mathématiques, physiques, et naturelles.) Paris. 1862-1880. (Continued as *Revue des Travaux Scientifiques.*)

Revue des Travaux Scientifiques. 1881-1898. (Continued as *Bulletin de la Société des Savants.* Sciences mathématiques, physiques, et naturelles.)

Revue Tunisienne (Institut de Carthage). Carthage, Tunisia. Since 1894.

Revue Universelle des Mines, de la Métallurgie des Travaux Publiques des Sciences et des Arts Appliqués à l'Industrie. Liège. (Paris-Le Soudier.) Since 1857.

Société Linéenne de Normandie. Since 1824.

Société de Statistique de l'Isère. Grenoble. Since 1838.

Statistique de l'Industrie Minière dans les Colonies Françaises. Melun. (Imprimeries Administratives.) Since 1900.

BIBLIOGRAPHIES AND ANNUAIRES

Académies des Sciences de l'Institut de France. Inventaire des Périodiques scientifiques des Bibliothèques de Paris (1) 1924; (2) 1929.

Annuaire Géologique Universel. Paris, 1885-1898.

Annuaire Universel des Mines et de la Métallurgie. Paris. Since 1906.

Annuaire des Mines et de la Métallurgie de la construction mécanique et de l'électricité. Paris. Since 1876.

Bibliographie Géographique. (Association de Géographes Français.) (Special number of the Annales de Géographie.) Paris. Since 1891.

Bibliographie des Sciences Géologiques (Société Géologique de France.) Since 1923.

Liste Alphabétique des publications périodiques de Bibliothèques Universitaires. 1918.

Revue de Géologie et des Sciences connexes. Since 1920 in Liege, Belgium.

Around The Reading Table

WARE, EDITH E. *The Study of International Relations in the United States.* Columbia University Press, New York City, 1934. 503 pp.

This book is a summary of the agencies and volunteer associations who are trying to inform the public in a very vital way of the need of international cooperation and understanding. The American people as a whole are becoming more and more interested in what their neighbors across the waters are doing, and what they are thinking.

With the urge for a planned society on the one hand and a composite picture of the old order on the other a balanced viewpoint may be obtained. The author calls attention to the interplay of national interests and their effects upon education. The influence of the research spirit is breathed in every chapter. One cannot read a single chapter without realizing that we are passing through a transition period in which society is attempting to formulate more definite and specific policies than it has in the past. While the book reveals the backward glance it also presents the possible forward movements. Possibly the most significant part of the whole book is the revelation that real progress has been made in giving the true picture of international interplay of forces.

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MORRISON, HENRY C. *Basic Principles in Education.* Houghton Mifflin Company, Boston, 1934. 452 pp.

The reviewer faces the impossible task of digesting this new work in the brief space of three hundred words. One of the very fundamental chapters in the book is Chapter II, *Terms and Sources.* The author here sets up working definitions of a list of terms needed later in his discussion. Accurate and coherent thinking depends on the possession of appropriate language forms (p. 27). The following definitions are cited as important ones:

(1) "Education . . . . is development in the individual by process of learning as distinguished from physical growth" (p. 30). From the discussion one is impressed with the absolute need for drawing sharp differences between education and erudition, education and training, education and a school career. Training implies, according to Professor Morrison, the willingness to think and to do as one is told to do or when habits are fixed upon one.

(2) " . . . . and the learning process is the change in personality which constitutes a new insight, or sense of value, or ability" (p. 38). Here again, as in education, *learning* implies both that which is of value and that which is at zero or below in the scale of value.

(3) " . . . . personality is the sum total of what an individual has come to be by learning the cultural products of social evolution" (p. 39). This definition, Professor Morrison states, is only a tentative one, but the term is used widely in the text in this sense.

(4) "Teaching is that intimate contact between a more mature personality and a less mature which is designed to further the education of the latter" (p. 41). "Its (teaching's) chief instruments are suggestion and constraint."

Other definitions are given in order that the understandings of the reader as to what is subsequently presented may not be left in doubt. The author further lays a background of education as existing in the life sciences, biology, physiology, and psychology.

No text in the field of philosophy of education has used as much space in dealing with the biology of the child as does this one. Approximately one-third of the book is devoted to this phase. A second emphasis is found in the treatment of personality. About one-fourth of the book is given over to the best discussion of that subject, which the reviewer has seen.

Finally, *Education as Adjustment* and *Educability* are treated in the final chapters. Fundamental, though not extensive, bibliographies are given.

The style in which the book is written further recommends it. It is an attempt to move in our philosophy from the "merely scholiums of speculative philosophy" to the ground that "progress in the study of life upon our planet, of Man and Man's place in Nature, of the human organisms, of society and the structure of society, has been so considerable that as it seems to me, we have the material for formulating a theory of education, defensible on grounds of scientific principle." (Preface, p. iv.)

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WOOTEN, KATHLEEN WILKINSON. *Health Workbook for College Freshmen.* A. S. Barnes and Company, New York, 1934. 212 pp.

This book is, as the author suggests, a workbook for an orientation course in personal, racial, home, and community hygiene for college freshmen. It is not a text, but a series of forty-seven chapter outlines planned to serve as the basis for a course in personal development. One suspects

each chapter may have been intended as approximately a day's assignment and begins with a statement of objectives, gives a study outline, a plan of activities or an assignment, and a rather extensive bibliography. Following each chapter are blank spaces for class notes. The workbook is punched to fit the average college looseleaf notebook and may be taken apart to permit chapter re-arrangements or the addition of material or it may be left intact as the teacher or student wishes.

In the introduction, written for the health education teacher, the author explains in some detail the teaching situation out of which these outlines were developed, and gives a clear picture of the principles, which explains the arrangement of the subject matter. "A freshman course in hygiene," she believes, "should not be a textbook course or a lecture course but an activity program; discussions that are too technical or vocabularies that are too technical are not suited to freshman work;.... first, last, and always a course in college hygiene should help the student to adapt himself to a changing civilization; and it should challenge the student to prepare for leadership in a better-planned society."

The workbook undoubtedly makes a valuable contribution to literature in the field of health education and should be especially useful to the teacher entrusted with the short freshman required course found in so many colleges and universities, a course that has sometimes been so thin or that has been so uninterestingly taught as to seem almost a waste of time.

—Florence M. Curtis
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WEIS, EZRA H. F. *The Music Preparation of Elementary Teachers in State Teachers Colleges.* Bureau of Publications, Teachers College, Columbia University, New York, 1934. 97 pp.

The sub-title of this publication is "A Study Limited to Teachers Below the Seventh Grade in Five Mid-Western States: Colorado, Kansas, Missouri, Illinois, and Kentucky." The study seeks to answer two questions: (1) What training are teachers colleges giving students in the Mid-West to prepare them for teaching music in the grades? (2) What observations can be made on present practice and what recommendations can be made for improvement?

The author obtained reports from 425 grade teachers in the five states studied. These reports show the various musical activities engaged in by the teachers, thereby giving some idea of the type of training they should have had.

The opinions of these grade teachers regarding the teaching of music are very interesting. Thirty-seven per cent of them think that special music teachers should teach all the music. Forty-six per cent think they should not. Only eight per cent think that the grade teacher should teach all the music, while sixty-six per cent think they should not. Evidently most grade teachers think that the combination of grade teacher and music supervisor is best.

Ninety-two per cent of the teachers think that all children in the first six grades should have some music taught them in school. A large majority of these teachers like to teach music.

There are twenty teachers colleges in the five states represented in the study. The range in percentage of the entire curriculum devoted to music in the preparation of the grade teachers is one to six per cent, with the mean at 3.8 per cent. Since seven per cent of the daily program in the public schools is devoted to music teaching, the author concludes that the time allotment for music in the teachers colleges should be increased. He suggests that six semester hours (nine quarter hours) be required with as much elective music as possible. He also suggests that prerequisites be set up for the required music courses and that the students who do not meet the prerequisites be required to take zero courses without credit until they are ready for the required courses.

A jury of experts consisting of twenty-eight of the foremost music educators in the country was selected to determine what should go into these six hours of music for the preparation of grade teachers. Five programs were submitted to the experts. The following program received, by far, the largest number of votes:

Music prerequisites—singing of simple folk songs at sight; playing a simple piece or hymn on the piano.

Two hours *Musicianship*—music development of the teacher: elementary theory, sight reading, singing, listening, playing, creating.

Two hours *Musical Literature*—acquaintance with music for the development of the teacher with materials for the children.

Two hours *Skill in Teaching*—music for grades 1 to 6: plans, presentation, rote songs, child voice, observation, student teaching.

Prescribed elective in voice and piano in addition to the six hours.

—L. M. Tilson
Indiana State Teachers College

STODDARD, GEORGE D. AND BETH L. WELLMAN. *Child Psychology.* The Macmillan Company, New York, 1934. 419 pp.

The authors have attempted "to base a psychology of the child directly upon the outcome of research." It is by all odds the best effort along this line now in the field.

The wise guidance of child development must necessarily be based upon an accurate knowledge of child nature as revealed by careful scientific investigation. The authors collected data from all fields in various countries touching child development.

The first chapter reviews rather fully the various methods of research with an evaluation of each method. The following eight chapters are on motor and mental development. These are followed by three chapters on social behavior, play, and artistic ability. The last five chapters deal with personality and adjustment problems in children.

The authors give much attention to the factor of maturation in learning. However, scientific data are still insufficient to draw final conclusions in this very important aspect of child development.

The book is necessarily highly analytical, due to the authors' effort to summarize the researches in all the various fields touching childhood; however, it is weak in synthesis. After reading the book there arises the feeling that it does not give a picture of the child as a whole—the living, breathing, dynamic being. This is necessarily so in a book limited to the data collected by strictly scientific research. We have not yet enough data of this kind to complete the picture. In the meantime, parents and teachers who have to deal with these living phenomena known as children will have to continue to use intuition and guessing in those realms where science is still silent, or does not yet speak with the voice of authority.

The book is sure to receive a warm reception and welcome by all those hosts of parents, teachers, and research workers who are interested in child development.

—R. A. Acher
Indiana State Teachers College

TUGWELL, REXFORD G. AND LEON H. KEYSERLING. *Redirecting Education.* Columbia University Press, New York City, 1934. 258 pp.

This volume is evidently the result of an attempt of five Columbia College instructors to orient themselves in the objectives of a course designed to orient college students in our industrial civilization.

That five instructors from at least four departments could successfully unite their efforts across traditional academic departmental lines is a favorable sign. That they would, "writing independently and simultaneously," arrive at remarkably similar conclusions with reference to the "central problems of American education," is an even more favorable sign. The most favorable indication, however, is read between the lines. When college teachers take time-out to reflect on the social purposes and implications of the courses they offer, a new motivation is added to their teaching and, contrary to popular opinion, a new incentive to scholarship in their own specific fields.

This volume is concerned with isolating a problem rather than specific solutions. The argument, while refreshingly free from the dogmatic tone which so often characterizes discussions of social values, is vigorous and convincing.

The work is divided into five essays. The first is a historic background leading up to a statement of the conditions making necessary a re-definition of social objectives in American education. The second deals with the need with reference to liberal education. Spscial stress is given the social sciences in this essay. The last three discussions touch the problem from the angles of the specific fields of history, economics, and political science.

For either the professional or lay reader interested in modern educational evolution this work offers both a splendid analysis of present-day educational needs and many vigorous suggestions as to the road ahead.

—V. Dewey Annakin
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